CLAIMS

What I claim is

1. (Currently amended) An inflatable graft for placement through tortuous, narrow or stenotic cerebral blood vessels comprising:
   a. a first outer wall of non-compliant material having a proximal end and a distal end;
   b. a second inner wall of non-compliant material having a smaller diameter than the first outer wall and having a proximal end and a distal end;
   c. a fluid tight ~~impermeable~~ seal of the first outer wall and the second inner wall at the distal and proximal ends;
   d. at least one or more fused junctures of the first and second wall, each non-inflatable fused juncture forming a circumference with a fixed diameter around the graft and not subject to inflation pressure wherein the graft can bend without kinking or distortion and that create fluid tight ~~impermeable~~ seals and fluid communicating passages to each resulting multiple fluid chambers between the said first and said second wall and the said multiple fused junctures;
   e. a valve to convey fluid into the interstitial space to inflate the graft to a pre-selected shape without distortion and create a smooth inner wall lumen;
   f. a plurality of radially oriented separate and narrow ~~non-elastic~~ non-distorting web support ~~reinforcement~~ attached to the second inner wall and first outer wall within one or more ~~non-elastically extensible~~ non-compliant fluid chambers and further comprising tapered web support ~~reinforcement~~ proximate to the fused junctures and causing the outer wall to taper to the fused juncture and form an acute angle to the cerebral blood vessel wall to dissipate dragging forces of flowing blood through the graft displacing the graft and to provide sites for neointimal growth; and
   g. the inflated first outer wall dimensioned to conform to the shape of the said cerebral blood vessel.

Claims 2 & 3 are cancelled

4. (Currently amended) ~~The graft of claim 1 wherein the width of a fused juncture of the first outer and second inner wall is variably sized along the circumference to create a non-linear shaped graft without kinking and distortion and the outer surface of the fused juncture anchors the graft to the inside of the blood vessel and provides a space on its outer surface for neoimtimal growth.~~ The graft of claim 1 further comprising a design selection of the segments and junctures to facilitate deployment of the device within varying vessel diameters, tissue structure or architecture.

5. (Previously presented) The graft of claim 1 wherein the outer wall has a greater longitudinal length between each fused joint than the longitudinal length of the inner wall.

Claims 6 and 7 are cancelled

8. (Previously presented) The graft of claim 1 wherein at least one wall is comprised of a material selected from a group consisting of polyethylene, polyurethane, tetrafluoroethylene, polytetrafluoroethylene and expanded polytetrafluoroethylene.

9. (Previously presented) The graft of claim 1 further comprising a fluid that can be communicated through the valve to fill the fluid chambers.

Claims 10 through 14 are cancelled.

15. (Currently amended) The graft of claim 1 wherein the radially oriented non-distorting web support ~~reinforcement~~ retains spacing and orientation of the inner wall relative to the outer graft wall with the addition of fluid.

16. (Previously presented) The tubular shaped graft of claim 1 having a first and second end wherein an outer diameter of the first graft end is different than the outer diameter of the second graft end.

Claims 17 and 18 are cancelled.

19. (Previously presented) The graft of claim 9 wherein after the fluid chamber is filled with fluid, the outer wall forms a substantially corrugated surface and the inner wall forms a substantially smooth surface.

20. (Previously presented) The graft of claim 9 wherein the fluid is a curable composition.

21. (Previously presented) The graft of claim 20 wherein the curable composition is selected from the group consisting of a monomer, a liquid pre-polymer and an un-linked polymer.

Claims 22 through 32 are cancelled.

33. (Previously presented) A method of treating cerebral aneurysm comprising the steps of:

a. Selecting a graft having an inflated diameter compatible with an un-diseased body lumen and providing a graft design that, when deployed across the aneurysm, will effectively exclude the aneurysm from circulation and reinforce the weak blood vessel wall; ~~.a length greater than the diseased portion of said cerebral vessel lumen,~~

b. inserting a flexible two walled graft of non-compliant material within the tortuous, narrow or stenotic cerebral blood vessels utilizing a catheter having a fluid conveying component and where the graft further comprises

(i) two walls fluid sealed at each end of the graft and forming fluid chambers between the walls where said fluid chambers are bordered by at least one fused junction;

(ii) a plurality of ~~inelastic~~ non-distorting web supports ~~reinforcements~~ oriented in a substantially radial direction within the fluid chambers and said web reinforcements are attached to the two walls;

(iii) at least one fused juncture wherein each fused juncture forms a circumference with a fixed diameter around the graft and wherein the fused juncture is not subject to inflation pressure and where the graft can bend without kinking or deforming;

(iv) a controllable valve accessing the fluid chambers between the walls of the graft and attachable to the fluid conveying component of the catheter;

c. maneuvering the graft to a selected location within the cerebral blood vessel lumen proximate to the aneurysm;

d. inserting fluid through a controllable valve within the graft into the fluid chambers between the two walls of the graft;

e. continuing the addition of fluid to deploy the graft in a radial direction sufficient that an outer wall of the graft contacts an un-diseased portion of the cerebral vessel lumen and a lumen is opened within the graft in communication with the cerebral vessel lumen;

f. continuing the addition of fluid to cause the graft wall to stiffen and isolate the aneurysm from the vessel lumen;

g. withdrawing the catheter; and

h. continuing use of the stiffened graft to reinforce the vessel wall, isolate the aneurysm and maintain the graft lumen in communication with the vessel lumen.

Claim 34 through 36 are cancelled.

37. (Previously presented) The method of claim 33 further comprising inserting a graft containing at least one fenestration and orienting the fenestration to a branch of the vessel lumen.

38 (Currently amended) A method of treating cerebral atherosclerosis comprising the steps of:

a. selecting a graft having a predetermined size and shape including side fenestrations;

b. inserting through the lumen of a tortuous, narrow or stenotic cerebral blood vessel a flexible two walled graft of non-compliant material utilizing a catheter having a fluid conveying component and where the graft further comprises

(ii) a first outer wall and a second inner wall fluid sealed at each end of the graft;

(iii) one or more fused junctures of the inner wall and the outer wall wherein each fused juncture forms a circumference with a fixed diameter around the graft, wherein the graft can bend without kinking or distorting and the fused juncture is not subject to fluid pressure and the fused junctures create fluid tight ~~impermeable~~ seals and fluid communicating passages within resulting fluid chambers between the first and second walls;

(iv) a plurality of ~~inelastic~~ separate narrow and non-distorting web supports ~~reinforcements~~ oriented in a substantially radial direction within the fluid chambers and attached to the first and second walls;

(iii) a controllable valve accessing the fluid chambers between the walls of the graft and attachable to the fluid conveying component of the catheter;

c. maneuvering the graft into an area of atherosclerosis within the vessel lumen;

d. inserting fluid through a controllable valve within the graft into the fluid chambers between the two walls of the graft;

e. continuing the addition of fluid to deploy the graft in a radial direction sufficient that the graft achieves a pre-selected shape without distortion and the outer wall of the graft contacts the vessel wall and the inner diameter of the vessel lumen is expanded and a smooth inner wall lumen is opened within the graft in communication with the vessel lumen;

f. continuing the addition of fluid to cause the graft wall to stiffen and the graft lumen expand to a selected diameter trapping residue or plaque between the graft and vessel wall;

g. withdrawing the catheter; and

h. continuing use of the stiffened graft to reinforce the vessel wall, maintain the expanded vessel lumen and maintain the graft lumen in communication with the vessel lumen.

39. (Previously presented) The method of claim 38 further comprising a tubular shaped graft containing a side fenestration at a selected location to allow deployment across bifurcating blood vessels.

Claims 40 through 41 are cancelled.

42. (Currently amended) A cerebral graft shaped for passage through and placement in the tortuous, narrow or stenotic cerebral circulatory system comprising:

a. a first hollow flexible non-compliant component having an open first proximal end and an open second distal end and forming an outer wall of a graft;

b. a second hollow flexible non-compliant component having a first open proximal end and a second open distal end and forming an inner wall of the graft;

c. a fluid tight ~~impermeable~~ seal joining the ends of the first and second components and a fluid impermeable seal joining the second ends of the first and second components forming a two walled lumen;

d. the first outer wall of the graft has an uneven surface and the second inner wall has a smooth surface;

e. at least one fused juncture of the outer and inner walls containing a fluid passageway wherein said juncture forms a non expanding circumference around the graft allowing the lumen to bend without kinking or distortion at the fused juncture;

f. a valve to convey fluid through the graft wall into fluid chambers between circumferentially oriented fused junctures and the sealed ends of the outer wall and inner wall of the lumen to inflate the graft to a pre-selected shape without distortion;

g. a plurality of flexible non-elastic web reinforcements within the fluid chambers and attached to the outer wall and inner wall wherein the length of the non-distorting web support ~~reinforcement~~ tapers proximate to the fused juncture; and

h. the addition of fluid into the fluid chambers to expand a vessel lumen.

Claim 43, 44 and 45 are cancelled.

46. (Currently amended) The graft of claim 42 wherein the web supports ~~reinforcements~~ are of varying length to cause the outer wall surface to be corrugated to prevent the drag force of the flowing blood through the graft from displacing the graft and to provide sites for neointimal growth.

Claims 47 through 57 are cancelled.